REMARKS

Claims 1 and 6 now stand in the application.

As requested by the Examiner, the Applicant has provided proposed amended drawings to correct the informalities identified by the Examiner, as well as to insert proper reference numbers in figures 6 to 8 .

As requested by the Examiner, the disclosure has been amended to correct the informalities and to insert the reference numbers in the description of figures 6 to 8.

Claims 1 and 2 have been amended to overcome the 35 USC 112 objections raised by the Examiner.

Claim 2 had been rejected as being anticipated by Onodera et al. Applicant respectfully traverses this rejection.

The invention as set forth in claim 2 is directed to an apparatus for cleaning industrial fluids using a centrifugal separator. The speed of rotation of the separator and hence the rotational force of the fluid impinging on the casing of the separator is controlled by a combination of both the flow rate of the centrifugal pump pumping the fluid into the separator as the air pressure within the chamber of the separator. By maintaining the rotational force between 1000g and 2000g, it has been found that significantly greater cleaning of the fluid can be achieved in a simple and reproducible manner. As set out on page 10, lines 14 to 18, a fluid of ISO Code 14/11 compared to a fluid of ISO Code 17/13 with a standard bag filter was obtained. It is respectfully submitted that the feature of maintaining the rotational force within the specified range by controlling the pump and air pressure to achieve the cleaning is not suggested, let alone taught by the cited art.

Onodera et al describe a centrifugal separator for use in an internal combustion engine in which the rotor of the separator is driven by a turbine which in turn is driven by air pressure or exhaust gas pressure of the internal combustion engine. It would be immediately apparent that the use of air pressure or exhaust gas

pressure to drive the turbine and hence the separator will not maintain the rotational force of the fluid within a narrow range as the air or exhaust gas pressure will vary greatly with the operation of the engine and will not be maintained at a steady rotational force. In addition, the apparatus and method of Onodera is directed to the cleaning of lubricants in internal combustion engine which is entirely different from the cleaning of industrial lubricants as set forth in the present claims. As set forth above, the speed of rotation of the rotor in the separator of the present invention is controlled by controlling the flow rate of the centrifugal pump and the air pressure within the casing of the separator. This is not suggested, let alone taught by Onodera et al. Accordingly, it is respectfully submitted that Onodera et al does not anticipate the claims of the application.

Claim 2 had been rejected as being unpatentable over Martin in view of Windsor et al. Applicant respectfully traverses this rejection.

While Windsor et al describes the use of a centrifugal separator for cleaning liquid coolant used in machine tools, the rotation of the rotor is controlled or driven directly by a motor 48. Pump 18 is used to move the coolant to the separator but is not used to control the rotation of the rotor. Martin describes a centrifugal separator for use in an internal combustion engine to clean the lubricating oil of the engine. Included in the separator of Martin is a source of compressed air to maintain the level of fluid in the separator. The separator of Martin is driven by the oil pressure from the oil pump of the internal combustion engine. It is readily apparent that the oil pressure from the oil pump varies depending upon the load placed on the engine and the rotational speed of the engine. Thus, Martin does not teach the control of the rotational force of the fluid impinging on the casing to maintain the force within a narrow specified range. Thus Martin does not teach the use of the apparatus for cleaning industrial fluids, nor does Martin teach controlling the rotation of the rotor through control of a centrifugal pump pumping fluid to the separator. Even if Windsor and Martin were combined, one of skill in the art would not be led to control the rotation of the rotor through the combination of controlling the speed of a centrifugal pump pumping fluid to the separator and the air pressure within the casing to maximize the

cleaning of the fluid. Accordingly, it is respectfully submitted that the claims are patentable over the combination of Windsor and Martin.

Claim 1 had been rejected as being unpatentable over Martin in view of Biggs et al or Carr. Applicant respectfully traverses the rejection.

Both of the apparatus of Biggs et al and Carr are directly driven by a motor drive to rotate the separator. Neither of the references teaches the control of the pump pumping the fluid into the separator to control the rotation of the separator and hence the cleaning of the fluid. As the apparatus of the present invention does require a separate motor to drive the separator, the apparatus is simpler to manufacture and operate. It is respectfully submitted that the features and advantages of the present invention as set forth above are not suggested, let alone taught by the combination of references cited. Accordingly, it is respectfully submitted that the claims of the present invention are patentable over the cited art.

Applicant at this time has also inserted new claims 3 to 6 directed to the multi-separator apparatus illustrated in figures 6 to 8 as well as the details of the storage tank illustrated in figures 4 and 5. It is respectfully submitted that these amendments add no new matter to the application not reasonably to be inferred from the application as originally filed.

In view of all the foregoing, it is respectfully submitted that the application is allowable, and early allowance is respectfully requested.

Respectfully submitted

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JJ/ab